

CERRO GRANDE FIRE FLOOD FIGHT PLAN

SAN ILDEFONSO PUEBLO SITES

PART 1-ADVANCE MEASURES AND EMERGENCY TECHNICAL ASSISTANCE PLAN

PURPOSE: Proposed is a two-part plan addressing the threat of potential flooding from approaching monsoon rains at Los Alamos County, Santa Fe County, and Department of Energy land. The threat was created by the Los Alamos fires of May 2000 that burned off the vegetation from the steep canyon slopes and baked the soil, which will dramatically increase the amount of runoff from the monsoon rains. The intent of the first part of the plan is to outline advance measure projects for protection against flooding. The second part of the plan is intended to present flood fighting, monitoring, communication, and evacuation suggestions that will augment the Los Alamos County, the Department of Energy, the San Ildefonso Pueblo, and the Santa Clara Pueblo emergency contingency plans.

AUTHORITY: The United States Army Corps of Engineers (Corps) is authorized to provide technical assistance and project construction that is requested by and funded by other federal agencies (i.e., Department of Energy, Bureau of Indian Affairs, Department of the Interior, Federal Emergency Management Agency).

Public Law (PL) 84-99 provides authority for the Corps to perform activities to protect against loss of life and damages to urban areas and/or public facilities due to flooding. Assistance activities to prevent damages may be taken prior to a flood.

SAN ILDEFONSO PUEBLO REQUESTS FOR ASSISTANCE: The Corps was asked by the San Ildefonso Pueblo to review existing infrastructure facilities on tribal land in anticipation of the July monsoon rains. Runoff from these rains is anticipated to be up to ten times the discharge that would be normally experienced, due to the deforestation caused by the Cerro Grande fire. Areas of concern include potential flooding of urban areas, adequacy of drainage structures, irrigation and water supply systems, and embankment slope protection. The following sites were visited in the field on 22 and 30 June 2000.

The San Ildefonso Pueblo requested technical assistance to identify areas at risk from the potential flood threat, make advance measures recommendations, design a solution to the risk, and construct the recommended solutions. The following is an itemized list of risk areas and solution recommendations.

SITE NO. SI-1: Garcia Canyon Bridge at Highway 30

A. Facility Description: The Garcia Canyon channel under the Highway 30 bridge is partially blocked by sediment deposits. Refer to typical box culvert section under Highway 30. The bridge has one pier and two spans, each approximately 42 feet wide. The clearance between the bottom low concrete of the bridge and the sediment ranges between approximately 5 and 6 feet.

B. Flood Control Recommendations: (See typical box culvert in Figure 3) In anticipation of the large flows that are expected in Garcia Canyon, the State Highway Department should remove sediment from under the bridge to increase the channel capacity under the bridge. The depth of the piers is not known, but it is assumed that they were installed deep in the subsoil. It appears that approximately 2 to 3 feet of sediment can be removed from the channel under the bridge; however, during sediment excavation, care should be taken not to over-excavate near the piers if they are shorter than expected. It is possible that the channel bottom was designed with rock protection so care should be taken not to remove the rock if it exists. It is estimated that the average sediment removal depth will be 2.5 feet with an average width of 84 feet, and an average length of 60 feet.

C. Additional Requirements: The State Highway Department should check this box culvert after each significant rainfall event to insure it is not blocked with debris or sediment.

D. Costs: Sediment removal accomplished with State Highway Department resources. The Corps notified the State Highway Department on 23 June 2000.

E. Schedule: The required work is estimated to require one week or less.

SITE NO. SI-2: North Boundary Wash Bridge at Highway 30

A. Facility Description: The downstream channel of the North Boundary Wash bridge at Highway 30 has experienced some severe erosion. A portion of the downstream drainage structure apron has been undercut by erosion and has failed. The abutments of both channel banks have also experienced some erosion. There is also a gas line approximately 70 feet downstream of the Highway. The channel bank and channel bottom have been eroded from around the gas line leaving it exposed.

B. Flood Control Recommendations: (See Figure 4) In anticipation of the expected large flows it is recommended that the PNM Electrical and Gas Services company that owns the gas line be contacted so that they can take some construction measures to protect the exposed gas line downstream of the bridge. The Corps contacted PNM on 30 June 2000.

It is recommended that the damaged portion of the spillway apron slab be broken up into pieces and left in place on the channel bottom as base material for construction of a new rock and concrete slush filled apron. The existing concrete apron is approximately 900 square feet in size and 6 inches thick with

steel reinforcing bars. Any cavities under the downstream end of the drainage structure and under any remaining portion of the downstream apron should be grouted with concrete. A new downstream rock apron for the drainage structure should then be constructed to prevent erosion damage from the expected large flows. Rock should be placed downstream of the existing drainage structure. The size of the rock placement area is approximately 40 feet in width and extends approx. 45 feet downstream from the drainage structure. The depth of the rock placement will range from approximately 2 to 4 feet.

The downstream abutments of the drainage structure are also eroded and should be graded and armored to protect them from high flows. Each abutment repair area is approximately 20 feet wide and extends approx. 45 feet downstream from the drainage structure. The depth of the rock is estimated at approximately 1 ft deep at the top of the slope and 2 feet deep at the toe of the slope. The recommended rock apron and the rock abutment protection should be slush grouted with concrete to help prevent the rock from being eroded by the expected high flows. The approximate surface area of the rock apron and rock abutments combined is 80 feet wide by 45 feet in length.

When construction of the rock apron and rock slope protection is complete, the gas line downstream of the drainage structure will be temporarily protected with sandbags. Approximately 420 sandbags and 8 tons of sand will be required.

C. Additional Requirements: The State Highway Department should check this culvert after each significant rainfall event to insure that the culvert is not blocked with debris or sediment.

D. Schedule: 2 weeks

SITE NO. SI-3: Potable water well at the Miller house off Garcia Canyon

A. Facility Description: The abandoned Miller house is located near the confluence of a small side canyon and Garcia Canyon. There is a functional potable water well and windmill at the abandon house. The side canyon is small and will have no fire-affected flows. However, Garcia Canyon is expected to have fire-affected flows and may have an impact on the well.

B. Flood Control Recommendations: (See Figure 5) It is recommended that the well at the ranch be protected from fire-affected flows in Garcia canyon. The well should be protected from debris carried by high flow, and from water entering and contaminating the well and aquifer. A sand bag dike should be constructed around the well to enclose it. The height of the sandbag dike will range between approximately 2 and 5 feet because of the uneven ground surface. The dike should be pyramid shaped with a bottom width ranging from 6 feet to 15 feet. It is estimated that 1000 sandbags will be required to construct the dike.

The Corps will provide the sandbags to requestor at no charge.

C. Additional Requirements: None

D. Schedule: The required work is estimated to require one day.

SITE NO. SI-4 Typical culverts under Highway 30 near the San Ildefonso Pueblo

A. Facility Description: There are two arroyos with culverts that pass under Highway 30 northwest of the San Ildefonso Pueblo. The size of the culverts varies. See the 'Typical Culvert Section' in Figure 3.

B. Flood Control Recommendations: It is recommended that the State Highway Department remove any sediment from these culverts.

C. Additional Requirements: None

D. Costs: Sediment removal to be accomplished with State Highway Department resources. The Corps notified the State Highway Department on 23 June 2000.

E. Schedule: The State Highway Department should check culverts under Highway 30 box culvert after each significant rainfall event to insure that the box culvert is not blocked with debris or sediment.

SITE NO. SI-5: Two box culverts under Highway 30 near the San Ildefonso Pueblo

A. Facility Description: There are two arroyos with box culvert structures that pass under Highway 30 northwest of the San Ildefonso Pueblo between the North Wash Bridge and Chupaderos Canyon. See typical box culvert section in Figure 3.

1.) The northern most culvert of the two is a four-cell box culvert bridge whose cells are approximately 11 feet wide and 5 feet high. The length of the arroyo is believed to be small and it appears that it will not have flows from the burn area. There is a fence upstream of the box culvert that will collect debris during high flows.

2.) The southern culvert of the two is a seven-cell box culvert bridge. It appears that the cells are 5 feet by 5 feet with some sediment deposits. The length of the arroyo is believed to be small and it appears that it will not have flows from the burn area.

B. Flood Control Recommendations: It is recommended that the fence upstream of the northernmost box culvert should be removed to prevent it from collecting debris and reducing the capacity of the arroyo. It is also recommended that the State Highway Department remove the sediment from the box culverts.

C. Additional Requirements: None

D. Costs: Sediment removal is to be accomplished and the resultant cost incurred by the State Highway Department. The Corps notified the State Highway Department on 23 June 2000. The San Ildefonso government will manage the fence removal.

E. Schedule: Sediment and fence removal to be accomplished prior to onset of monsoon season. Fence removal will take less than one day and sediment removal may take one to two days.

SITE NO. SI-6: Chupaderos Canyon Bridge at Highway 30

A. Facility Description: The Chupaderos Canyon channel under the Highway 30 bridge is partially blocked by sediment deposits. The bridge has two piers and three bridge spans, each 24 feet wide. The clearance between the bottom concrete of the bridge and the sediment ranges between approximately 2 and 3 feet.

B. Flood Control Recommendations: (See typical box culvert section in Figure 3) In anticipation of the large flows that are expected in Chupaderos Canyon, it is recommended that the State Highway Department remove the sediment from under the bridge to increase the channel capacity under the bridge. The depth of the piers is not known, but it is assumed that they were installed deep in the subsoil. It appears that 3 to 4 feet of sediment can be removed from the channel under the bridge, however, during sediment excavation care should be taken not to over-excavate near the piers if they are shorter than expected. It is possible that the channel bottom was designed with rock protection so care should be taken not to remove the rock if it exists. It is estimated that the average sediment removal depth will be 3.5 feet with an average width of 72 feet, and an average length of 60 feet.

C. Additional Requirements: None

D. Costs: Sediment removal to be accomplished and resulting costs to be incurred by the State Highway Department. The Corps notified the State Highway Department on 23 June 2000.

E. Schedule: The State Highway Department should check Chupaderos canyon at Highway 30 bridge after each significant rainfall event to insure that the bridge opening is not blocked with debris or sediment.

SITE NO. SI-7: Chupaderos Canyon left bank levee upstream of Highway 30

A. Facility Description: There are levees on both sides of the Chupaderos Canyon on the upstream side of Highway 30. The channel side slopes of the levees are armored with anchored wire wrapped rock filled mattresses. The northeast levee (the left levee as looking downstream) has two rock mattress failure areas that may be affected by burn-influenced flows. These areas are approximately 500 feet downstream of the gravel pit at the upper end of the left side levee. It appears

that soil underlying the bottom of the rock mattress has been eroded away and the rock mattress has slid down the slope, along with the slope anchors, into the void left by the eroded soil. This leaves the upper portion of the levee vulnerable. The slope of the levee underlying the rock mattress in these areas appears to be at an acceptable angle and fairly stable. The upstream failure is approximately 40 feet long and the lower failure is approximately 33 feet long. The levee in this area is between 15 and 20 feet high.

B. Flood Control Recommendations: (See Figure 6) In anticipation of the large flows that are expected in Chupaderos Canyon it is recommended that the rock mattress and anchors be repaired. The recommended repair consists placing a rock toe at the base of the mattress to stabilize the mattress. The existing mattress should be held in place while the toe excavation is accomplished and the new rock toe is placed. The rock mattress can be held in place or manipulated with one backhoe while a second backhoe excavates and places the rock toe under the mattress. The rock toe should be constructed under the mattress and extend channel-ward from the slope approx. 2 feet with a minimum depth of 1 foot. The upstream toe construction is approximately 40 feet long and the lower one is approximately 33 feet long. The existing mattress anchors should be re-driven perpendicular to the slope. New anchors should be driven as necessary.

C. Additional Requirements: The entire mattress should be closely inspected for other failure areas and repaired.

D. Schedule: 1 week

SITE NO. SI-8: Chupaderos Canyon right bank levee upstream of Highway 30

A. Facility Description: There are levees on both sides of the Chupaderos Canyon on the upstream side of Highway 30. The channel side slopes of the levees are armored with anchored wire wrapped rock filled mattresses. The southwest levee (the right levee as looking downstream) has a rock mattress failure area that may be affected after pot burn flows. This area is at the upper end of the right bank levee. The upstream end of the rock mattress has been pulled off the levee slope by high flows. This leaves the upstream end of the levee vulnerable to erosion. The slope of the levee underlying the rock mattress in these areas appears to be at an acceptable angle and fairly stable. The failure is approximately 20 feet long. The levee in this area is between 15 and 20 feet high.

B. Flood Control Recommendations: (See Figure 6) In anticipation of the large flows that are expected in Chupaderos Canyon it is recommended that the rock mattress and anchors be repaired. The recommended repair consists of replacing the wire basket and rock. The repair should be accomplished without damaging the existing slope protection. The rock repair should include keying the upper end of the rock mattress back into the existing slope. This will require excavating a trench for the key-in. The wire basket should be reattached at the top and keyed back into the top of the levee. The repaired rock mattress should be anchored to the slope with 4 foot long steel "L" beams that extend through the rock mattress and into the levee slope material. There should be two rows of anchors

horizontally across the slope. The horizontal spacing of the anchors should be approximately 4 foot on center.

C. Additional Requirements: None

D. Schedule: 1 week

SITE NO. SI-9: Small diversion levees on west side of Highway 30 near San Ildefonso Pueblo

A. Facility Description: There are small levees along the banks of Contrayerba Canyon just upstream of Highway 30. The levees contain and direct surface drainage under Highway 30.

B. Flood Control Recommendations: It appears that this canyon will not have flows from the burn area. Therefore no advance measures for protecting against flows from burn effects are recommended. (No figure shown).

C. Additional Requirements: None

D. Costs: There are no cost estimates associated with this site.

E. Schedule: There is no schedule for this site.

SITE NO. SI-10: Mortandad Canyon culverts under Highway 4

A. Facility Description: Mortandad Canyon passes under Highway 4 near the Navawi Ruins. At this location there are three culverts that pass under Highway 4. The culverts are filled with silt to within approximately 1 to 2 feet of the top of the culverts.

B. Flood Control Recommendations: (See typical box culvert section in Figure 3) It is recommended that the State Highway Department remove the silt from these culverts.

C. Additional Requirements: None

D. Costs: Cost of sediment removal to be incurred by the State Highway Department. The Corps notified the State Highway Department on 23 June 2000.

E. Schedule: The State Highway Department should check Mortandad canyon culverts at Highway 4 bridge after each significant rainfall event to insure that the bridge opening is not blocked with debris or sediment.

SITE NO. SI-11: Box culvert under Highway 4 at northeast side of White Rock

A. Facility Description: There is a box culvert under Highway 4 in a canyon at the Northeast side of White Rock. This canyon is a small canyon east of Cedro Canyon on the San Ildefonso reservation that drains into White Rock after it passes through the box culvert under Highway 4. The twin 8 foot by 8 foot box culvert is partially silted in, with silt ranging from approximately 2 to 3 feet deep. The channel upstream of the culvert has meandered to the southwest bank and abutment before it cuts back into the culvert entrance. There is a mound of silt approximately 5 feet tall containing brush and trees where the design channel should be.

B. Flood Control Recommendations: (See typical box culvert section in Figure 3) It appears that this canyon was not in the burn area and will not have burn-affected flows. Therefore no advance measures for protecting against flows from burn effects are recommended. However, it is recommended that the State Highway Department remove the sediment from the box culverts, straighten the upstream channel to align with the box culverts, and repair the westerly abutment of the box culvert structure.

C. Additional Requirements: None

D. Costs: Cost of sediment removal to be incurred by the State Highway Department. The Corps notified the State Highway Department on 23 June 2000.

E. Schedule: The State Highway Department should check this box culvert at Highway 4 after each significant rainfall event to insure that the culvert opening is not blocked with debris or sediment.

SITE NO. SI-12: Well house west of Totavi

A. Facility Description: There is a potable water well and pumping facility just upstream of Totavi on the East Side of Highway 502.

B. Flood Control Recommendations: (See Figure 7) As a temporary measure to divert high canyon water flows and debris away from the facility, it is recommended that standard highway barrier panels be placed upstream of, and on the canyon side of the facility with a mass fill behind the barriers. The barriers would extend from high ground near the Highway 502 embankment (approximately 50 to 80 feet upstream of the pump house), be angled downstream, and wrap around the channel-ward side of the facility until it extends past the downstream end of the facility. The barrier would be approximately 160 feet long and approximately 3.5 feet high. The barrier panels would be connected together and pinned to the ground with standard barrier connections and pinning. The mass fill would consist of random fill that would be placed against and to the height of the top of the barriers. The width of the random fill would be two feet wide at the barrier tops with a back slope at the angle of repose. Before the random fill is placed, 10 mil. plastic sheeting (visqueen) will be placed between the fill and the barrier panels to delay saturation of the random fill from high flows, as shown on Figure 7. The plastic sheeting should be keyed into the ground along the entire length of the barrier, under the random fill close to the barrier. The key in trench should be between a 6 to 12 inches deep.

C. Additional Requirements: Some fencing on the canyon side of the facility might have to be removed to accommodate the recommended construction.

D. Schedule: 2 weeks

SITE NO. SI-13: Totavi gas station

A. Facility Description: This is the site of a Phillips 66 station and convenience store located along highway 502 at a wide area of Los Alamos canyon just upstream of the confluence of Bayo canyon with Los Alamos canyon. This widened area on the canyon side of Highway 502 is approximately 10 to 12 feet above the canyon channel bottom. The canyon high flows are not expected to be very deep across this wide area of the canyon, however they will be carrying debris that could damage the Totavi station facilities.

B. Flood Control Recommendations: (See Figures 8 & 9) It is recommended that a diversion structure be used to protect the site from debris carried by high flows. This structure would consist of highway barriers (Jersey barriers) with random fill material behind them for stability, as shown in Figure 8. The barriers would extend from high ground near the Highway 502 embankment (approximately 50 to 80 feet upstream of the gas station), be angled downstream, wrap around the channel-ward side of the gas station, and extend past the downstream end of the gas station. The barrier would be approximately 400 feet long and approx. 3.5 feet high. The barrier panels would be connected together and pinned to the ground with standard barrier connections and pinning. The mass fill would consist of random fill that would be placed against and to the height of the top of the barriers. The width of the random fill would be two feet wide at the barrier tops with a back slope at the angle of repose. Before the random fill is placed, 10 mil. plastic sheeting (visqueen) will be placed between the fill and the barrier panels to delay saturation of the random fill from high flows, as shown on Figure 7. The plastic sheeting should be keyed into the ground along the entire length of the barrier, under the random fill close to the barrier. The key in trench should be between a 6 to 12 inches deep. During an event if the water seeps through or flows around the barrier the gas station and gas pumps can be protected with highway barriers or sandbags. One recommendation is to create a V-shaped or diamond shaped barrier structure around the fuel dispensers and power poles, with sandbags at the barrier panel junctions (Figure 9). This would divert the flow around the fuel dispensers to reduce the damage. The V-shaped or diamond shaped barrier can be constructed of sandbags.

C. Additional Requirements: None

D. Schedule: 2 weeks

SITE NO. SI-14: Totavi residences

A. Facility description: Three private residences are situated immediately downriver (east) of the gas station (see above). The barrier structure around the gas station upstream of these homes might provide some protection from debris for these private residences.

B. Flood control recommendations: (See Figure 10) It is recommended that a diversion ditch running perpendicular to Highway 502, between the houses and the gas station, be constructed upstream of the three structures. This ditch will act in conjunction with the diversion structure by redirecting any water that makes it around the gas station.

C. Additional requirements: It is recommended that the occupants of the three houses receive an evacuation notice in the event of a pending significant flood event. For lesser events, the residents should be provided with sand and sand bags to protect their houses.

D. Schedule: 1 week

SITE NO. SI-15: Natural spring south side of Highway 502 downstream of Totavi

A. Facility Description: There is a natural spring at the embankment toe of Highway 502 upstream of the Highway 502 and Highway 30 split. The spring is in the bottom of a drainage channel along the embankment toe of Highway 502. It is expected that the high flows from Los Alamos Canyon will flow over this spring and deposit sediment on the spring exit point.

B. Flood Control Recommendations: No action is the recommendation on this area since it appears that this area cannot be protected. It is possible that the area may not experience a large amount of sediment. If the spring is covered with sediment after the flood event, the spring may percolate up through the sediment, or the sediment may be able to be removed. (No figure shown).

C. Additional Requirements: None.

D. Costs: There are no cost estimates associated with this site.

E. Schedule: There is no action scheduled.

SITE NO. SI-16: Highway 30 interchange with Highway 502 riprap protection

A. Facility Description: There is some embankment toe riprap protection damage at the Highway 502 and Highway 30 split, along the eastbound lane of Highway 502. Highway 502 has embankment toe riprap protection on the Los Alamos canyon side (south side) slope of the embankment. The riprap has been undercut by erosion from a meandering high flow channel of the Los Alamos Canyon creek. The toe erosion is at the toe-in of the riprap slope protection and is approximately 100 feet long.

B. Flood Control Recommendations: (Figure 11) In anticipation of the large flows that are expected in the Los Alamos Canyon it is recommended that the riprap toe be repaired. The recommended repair consists of excavating a toe-in trench at the toe of the existing riprap protection and installing a cellular gabion type structure at the existing riprap toe for a length of approximately 100 feet. The excavation should be accomplished with as little damage to the existing riprapped slope as possible. The riprap toe-in excavation should be approximately 3.5 feet wide extending out from the existing toe of the levee toward the canyon channel. The bottom of the excavation should be 3 feet down from the bottom of the riprap toe. The depth of the excavation will vary from nothing at the worst damage area to approximately 3 feet at the lesser damage areas. At the worst damage area the erosion is approximately 3 feet deep. In this area there is no excavation needed other than grading the erosion scarp to receive the cellular gabion structure. However, after the gabion structure is completed the eroded area on the canyon side of the structure will have to be filled in to the same height as the gabion structure, using material excavated from the canyon-ward side of the erosion damage.

C. Additional Requirements: In order to protect the recommended gabion toe-in repair from high flows in the meandering channel, other protection measures are recommended. It is recommended that a series of weirs extending out from the riprapped slope and angled upstream be installed. These weirs should be higher at the highway embankment end and lower at the channel end to help direct the flow back toward the main channel. There should be at least three weirs spaced approximately 100 feet apart starting at the area where the channel braid meanders over to the embankment slope. Each weir structure should be approximately 50 feet long. The weirs should be constructed with 3 foot by 3 foot cellular gabions excavated into the channel bottom.

D. Costs: The State Highway Department will incur the costs associated with this work.

E. Schedule: It is recommended that this work be completed prior to the onset of the monsoon season.

SITE NO. SI-17: Bayo Canyon at Highway 502

A. Facility Description: The Pueblo of San Ildefonso has leased land to a sand and gravel (aggregate) business that is/has conducted operations just north of Route 502 in Bayo Canyon (a side canyon to Los Alamos canyon). Bayo Canyon passes under Highway 502 through a box culvert just downstream of the three homes and gas station at Totavi. Tribal concerns centered on the proper function of an 8 feet by 10 feet box culvert that passes storm flow from Bayo Canyon under Route 502 into Los Alamos Canyon downstream of the houses. A site inspection was performed and tribal representatives requested that the Corps send a letter to the operator requesting (suggesting) the removal or rearrangement of low-lying equipment that might be washed into, and compromise the performance of, the existing culvert.

B. Flood Control Recommendations: Bayo Canyon enters Los Alamos Canyon downstream of Totavi and it appears that flow from Bayo Canyon will not affect the Totavi area. Therefore, no advance measures for protecting against flows from Bayo Canyon at Highway 502 are recommended.

However, it is recommended that as a precautionary measure any light equipment or discarded gravel pit operation materials be removed from the canyon channel area so that they are not carried by high flow into the box culvert. The gravel pit operator has a lease for gravel pit operations in this area. The Pueblo of San Ildefonso requested that the Corps send a letter to the gravel pit operator informing him to remove light equipment and discarded operations materials from the canyon channel. This would prevent any possibility that the material in question could be washed downstream and possibly block the Highway 502 box culvert on Bayo Canyon. The gravel pit operator leases the land from the Pueblo of San Ildefonso. (No figure shown).

C. Additional Requirements: Although the Corps may not have the authority to require the gravel pit operator on Bayo Canyon to remove the equipment and materials from the channel, it would be prudent to do so. The Corps will consider sending the gravel pit operator a letter on this subject.

D. Costs: There are no cost estimates associated with this site. Cost of sediment or debris removal after each significant rainfall event is to be incurred by the State Highway Department.

E. Schedule: The State Highway Department should check Bayo Canyon Highway 502 box culvert after each significant rainfall event to insure that the box culvert is not blocked with debris or sediment.

SITE NO. SI-18: Los Alamos Canyon at Highway 502 above Totavi, near large water tank on “S” curves

A. Facility Description: Tribal representatives escorted Corps personnel to a location in Los Alamos canyon above Totavi where it had been told to them that excavated rock material from Highway 502 construction activities had fallen to the bottom of the canyon and would restrict flow. Tribal representatives and Government representatives agreed that no such restriction was present.

B. Flood Control Recommendations: No action recommended in this area. (No figure shown).

C. Additional Requirements: None

D. Costs: There are no cost estimates associated with this site.

E. Schedule: There is no action scheduled.